

But the question is of substantial importance and should be answered.

The policy for elderly hypertensives is more difficult to define. There is little point in treating very old patients with hypertension with the aim of preventing a long-term risk. Yet hypertension becomes more frequent as age advances. Only 0.2% of the 30-39-year-old age group have a diastolic pressure exceeding 110 mm Hg, but by the 60-69 decade 4.6% exceed this level.<sup>3</sup> Some would argue strongly that antihypertensive treatment offers elderly people the best chance of reducing the risk of strokes and the consequent misery and disability that goes with them. Clinical trials are needed to determine how effective and practical such treatment would be in older people.<sup>3</sup>

<sup>1</sup> Veterans Administration Co-operative Study Group on Antihypertensive Agents, *Journal of the American Medical Association*, 1967, 202, 1028.

<sup>2</sup> Veterans Administration Co-operative Study Group on Antihypertensive Agents, *Journal of the American Medical Association*, 1970, 213, 1143.

<sup>3</sup> World Health Organization, *Technical Report Series No. 469*. Geneva, 1971.

## Vagotomy for Duodenal Ulcer

The operation of vagotomy for duodenal ulcer has been modified repeatedly over the past 20 years. Firstly, division of the vagal trunks at the oesophageal hiatus—truncal vagotomy—was practised. This denervates not only the stomach but also other abdominal viscera, and since denervation of the stomach leads to gastric stasis gastroenterostomy was added to overcome this unwelcome side effect. Pyloroplasty was then recommended instead of gastroenterostomy as being a more physiological operation and one which might prevent such unpleasant side effects as bilious vomiting and malabsorption due to poor food mixing.

Selective vagotomy was introduced because it seemed illogical to denervate most of the abdominal viscera just to reduce gastric acidity. Anterior selective vagotomy, preserving the hepatic branches of the anterior vagus, and posterior vagotomy, preserving the coeliac branches of the posterior vagus, were both tried. Finally, bilateral selective vagotomy became established, and though it lessened the incidence of postvagotomy diarrhoea it did not eliminate it.<sup>1</sup> Selective vagotomy is now being superseded by a further refinement—denervation of only the acid-secreting cells of the stomach. This preserves the nerve supply of the antrum so that an additional drainage operation is claimed to be unnecessary. Various called highly selective vagotomy, proximal gastric vagotomy, or parietal cell vagotomy, the initial results of this procedure have been mostly good,<sup>2,3</sup> though there has been a recent adverse report on the clinical results.<sup>4</sup> A note of caution was sounded by a study<sup>5</sup> which showed that there was a recovery of acid secretion over a period of 12 months after the operation. This may have been due to reinnervation, but as yet its clinical significance is uncertain.

As the nomenclature of vagotomy gets more complex so does the operation. A highly selective vagotomy takes longer to perform and in an obese patient may be a tedious and difficult procedure. Many surgeons with long operating lists and limited operating time will probably require definite evidence of the superiority of this new operation before they

abandon their present practice. Recently some long-term results of vagotomy and pyloroplasty for duodenal ulcer have been compared<sup>6</sup> with those obtained in a previous study<sup>7</sup> of patients after truncal vagotomy and gastroenterostomy, truncal vagotomy and antrectomy, and partial gastrectomy. Surprisingly for any student of the surgical literature over the past 10 years, vagotomy and pyloroplasty proved to be the least satisfactory operation of the four. The proponents of vagotomy rightly claim that it is safer than partial gastrectomy, but the recurrent ulcer rate is higher and second operations for peptic ulcer are more difficult and dangerous. Therefore when the total surgical treatment required to control a patient's ulcer diathesis is considered the overall mortality rates may not be much different.

The long-term sequelae of partial gastrectomy are well documented and include weight loss, anaemia, malabsorption, bone disease, and pulmonary tuberculosis. Ten years ago it was taught that a history of pulmonary tuberculosis was a definite indication for vagotomy and drainage, but a recent report<sup>8</sup> of a fifteen-year follow-up of patients after vagotomy and gastroenterostomy shows this advice to be questionable. All the long-term metabolic effects previously regarded as the result of gastric resection were observed, though they took longer to appear. An appreciable number (7%) of patients developed pulmonary tuberculosis during the period of observation.

A high recurrent ulcer rate after vagotomy is almost always related to incomplete nerve section, and a recent study<sup>9</sup> showed that surgeons varied greatly in their ability to do a complete vagotomy and that it was not always related to experience. Logically, therefore, surgeons should carry out insulin tests on their patients six months after vagotomy, and if the incidence of incomplete vagotomy is high they might consider returning to gastric resection as their standard operation.

Most of the standard operations for peptic ulcer were introduced with enthusiasm, and their shortcomings became apparent only after a number of years. When the results of the various established procedures are compared objectively they are found to be very similar.<sup>7</sup> An inevitable conclusion is that the patient and not the operation matters more. More attention has been directed towards the "gastric" component of the disease than to the "cerebral" component. A recent study showed that psychological testing before operation gave a fairly accurate prediction of those patients in whom a poor result was probable.<sup>10</sup> Readers familiar with the Peter principle<sup>11</sup> will recall that people advance in life until they reach a level at which they are incompetent. They sometimes resolve their dilemma by developing psychosomatic disease. For some patients a duodenal ulcer represents the pathology of success, and the chances of curing such an individual by operation are uncertain, to say the least.

<sup>1</sup> Kennedy, T., and Connell, A. M., *Lancet*, 1969, 1, 899.

<sup>2</sup> Amdrup, E., and Jensen, H. E., *Gastroenterology* 1970, 59, 522.

<sup>3</sup> Johnston, D., *British Medical Journal*, 1972, 1, 179.

<sup>4</sup> Wastell, C., Colin, J. F., MacNaughton, J. I., and Gleeson, J., *British Medical Journal*, 1972, 1, 28.

<sup>5</sup> Amdrup, E., and Kragelund, E., *Gut*, 1971, 12, 866.

<sup>6</sup> Goligher, J. C., et al., *British Medical Journal*, 1972, 1, 7.

<sup>7</sup> Goligher, J. C., et al., *British Medical Journal*, 1968, 2, 781.

<sup>8</sup> Wheldon, E. J., Venables, C. W., and Johnston, I. D. A., *Lancet*, 1970, 1, 437.

<sup>9</sup> Johnston, D., and Goligher, J. C., *Gut*, 1971, 12, 963.

<sup>10</sup> McColl, I., Drinkwater, J. E., Hulme-Moir, I., and Donnan, S. P. B., *Gut*, 1971, 12, 856.

<sup>11</sup> Peter, L. J., and Hull, R., *The Peter Principle*. London, Souvenir Press Ltd., 1969.